

What is claimed is:

1 1. A manufacturing method for an electronic device,
2 comprising:

3 a hole-forming step of forming a contact hole in an
4 insulating film that covers a conductive part formed on a first
5 main surface of a substrate and an area surrounding the conductive
6 part, the hole being formed beside the conductive part, and the
7 conductive part including a first material;

8 a material-supplying step of supplying a second material
9 to the contact hole, the second material having a reactive
10 property with the first material; and

11 an inspection step, after the second material has been
12 supplied, of inspecting for evidence of a reaction by the
13 conductive part with the second material.

1 2. The manufacturing method of Claim 1, wherein
2 the reactive property of the second material causes the
3 conductive part to be eroded on contact with the second material,
4 and

5 in the inspection step, evidence that the conductive part
6 has been eroded is inspected for.

1 3. The manufacturing method of Claim 2, wherein

2 in the inspection step, evidence of erosion is inspected
3 for optically.

1 4. The manufacturing method of Claim 3, wherein
2 in the inspection step, evidence of erosion is inspected
3 for after removing the second material from the contact hole.

1 5. The manufacturing method of Claim 4, wherein
2 the first material is one of tungsten and a tungsten alloy,
3 and
4 the second material is a solution including one of hydrogen
5 peroxide and ozone.

1 6. The manufacturing method of Claim 5, wherein
2 in the material-supplying step, the solution is supplied
3 to the contact hole under a condition by which the solution is
4 able to selectively erode the conductive part.

1 7. The manufacturing method of Claim 1, wherein
2 the electronic device is a memory device that includes
3 a plurality of components that function as field effect
4 transistors, and
5 the conductive part is a function electrode that is formed
6 before the hole-forming step by applying a design rule that

7 stipulates an electrode width of 0.18 μ m or less.

1 8. The manufacturing method of Claim 3, wherein
2 the conductive part includes a large-area portion that
3 is sufficient in size to enable inspection thereof with an optical
4 microscope for evidence of the reaction, and
5 in the inspection step, evidence of the reaction in the
6 large-area portion is inspected for.

1 9. The manufacturing method of Claim 2, wherein
2 in the inspection step, after a material including at least
3 the second material has been removed, presence of at least one
4 of the first material and a compound of the first material and
5 the second material is inspected for in the removed material.

1 10. The manufacturing method of Claim 1, wherein
2 the substrate has a pre-formed inspection area that is
3 independent of other circuits areas,
4 in the material-supplying step a contact hole formed in
5 the inspection area is subject to the inspection, and
6 in the inspection step, a conductive part formed in the
7 inspection area is subject to the inspection.

1 11. The manufacturing method of Claim 1, wherein

2 in the hole forming step, the contact hole is formed using
3 a self-align contact method.

1 12. The manufacturing method of Claim 11, wherein
2 a silicon nitride film is provided on the substrate as
3 an etching stopper layer in the hole forming step.

1 13. The manufacturing method of Claim 12, wherein
2 the insulating film is formed of boron phosphorus silicon
3 glass, and
4 the first material has an etching selectivity ratio of
5 100 or higher in relation to material that composes the etching
6 stopper layer and material that composes the insulating film.

1 14. An electronic device, comprising:
2 a substrate on which a plurality of circuit areas are
3 formed; and
4 an insulating layer formed on a first main surface of the
5 substrate,
6 wherein at least one of the circuit areas is an inspection
7 area that is independent of other circuits areas, and includes
8 a conductive part and a contact hole, the conductive part being
9 formed in the insulating film, and the contact hole neighboring
10 a periphery of the conductive part.

1 15. The electronic device of Claim 14, wherein
2 the conductive part includes a large-area portion that
3 is inspected using an optical microscope.

1 16. The electronic device of Claim 15, wherein
2 the inspection area is formed in a scribe area that is
3 used as a cutting margin when cutting the other circuit areas
4 from the substrate.

1 17. The electronic device of Claim 16, wherein
2 the conductive part is composed of a material that has
3 an etching selectivity ratio of 100 or higher in relation to
4 a material that composes the insulating film.